



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



FLORA
OF
ARBROATH
AND ITS
NEIGHBOURHOOD



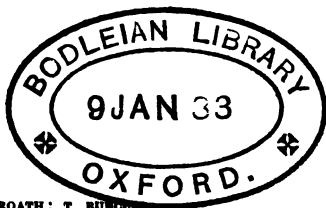


THE FLORA OF ARBROATH

And its Neighbourhood :

BRING A LIST OF
FLOWERING PLANTS AND FERNS,
WITH AN APPENDIX OF
MOSSES, LICHENS, AND SEaweEDS.

PREPARED BY A COMMITTEE OF
The Arbroath Horticultural and Natural History
Association.



ARBROATH: T. BUNCH.

1882.

191. k. 253

**'I say unto you, Even Solomon in all his
glory was not arrayed like one of these.'**

LUKE XII. 27. (*Revised Version.*)

CONTENTS.

	PAGE.
PREFACE, - - - - -	v.-viii
LIST OF FLOWERING PLANTS AND FERNS, - -	1-45
<i>Appendix :</i>	
I. LIST OF MOSSES, - - - -	47
II. LIST OF LICHENS, - - - -	50
III. LIST OF SEAWEEDS, - - - -	51
IV. ADDITIONS TO LIST OF FLOWERING PLANTS AND FERNS, - - -	55
V. GUIDE TO THE EXAMINATION OF PHANEROGAMOUS PLANTS, - -	57
INDEX OF THE NATURAL ORDERS OF FLOWERING PLANTS AND FERNS, - - - - -	61

Preface.

ARBROATH is situated in a district which presents a field of great and varied interest to the Botanist, combining as it does a rich maritime and inland flora, and being within very easy access of the lake region near Forfar, which offers ample stores of surpassing interest to the student of marsh and aquatic plants. A line drawn from Montrose to Forfar, and from Forfar to Dundee, would mark the inland boundary of the district to which we have confined ourselves in the following list, and which thus embraces nearly the whole of maritime and a great part of lowland Forfarshire, including also the eastern end of the Sidlaw Hills.

The only list of local plants previously published is given by Mr. John Bremnar in an interesting little book, now long out of print, entitled, 'The Cliffs and Caves of Aberbrothock,' in which he tabulates in alphabetical order the principal plants found on the cliffs and the adjacent waysides, giving their botanical and common names and their periods of flowering. As the present list does not profess to be complete in all points, nor to have any very high scientific value, it may be well to state briefly the circumstances which led to its being compiled, and the objects for which it is now published.

Soon after the commencement of our Association, in 1880, a prize was offered by Mr. Hutton, the Honorary President, for the best Herbarium formed by members of the Society. In November 1881 the prize was decided, and was awarded equally to two large and carefully mounted herbaria, composed chiefly of local plants, formed by Mr. John Stewart, Letham Mill, and Mr. John Nicoll, Jun., New Cemetery. It was suggested that on the basis of these herbaria, with the help of information supplied by other members of the Society, a list of local plants might be made which, while it preserved the results of their observations, might be useful in the following ways.

1.—Beginners in Botany, until they become familiar with the appearance and characters of the principal Orders and Genera, find it often very difficult and disheartening work tracing out the name of a plant from among the 1680 species included in the *British Flora*. By learning from this list what species they are most likely to find in the locality, their work will be very much simplified and their conclusions rendered more accurate. It is hoped that in this way it may be useful to members of the Society just beginning to direct their attention to this study, and more particularly to the large Botany Class which has been conducted during the winter with great zeal and ability by Mr. Brebner.

2.—As a field companion. When the student

learns at an excursion the names of a number of plants, these are very apt to escape his memory unless written down at the time, which can seldom be conveniently done. A mark opposite the name of a plant in a pocket list such as this will enable him afterwards to identify the specimen and study its characteristics.

3.—To form a preliminary list, on the basis of which we hope by and by to frame an exhaustive list of all the plants of the district, including Grasses, Mosses, Fungi, and Seaweeds.

A committee was accordingly appointed, consisting of Messrs Hutton, Nicoll, Stewart, Smith, and Dr. J. S. Crichton. The committee have to acknowledge with thanks very valuable assistance, especially in regard to the Flora of the lake district, rendered by Messrs Knox, Forfar; Sturrock, Rattray; and Graham, Rescobie. Their thanks are also due to Messrs Knox and Brebner for revising the proof sheets. With reference to the scientific names of the plants, and the arrangement of the Orders and Genera, the Committee have followed generally the 'London Catalogue.' An appendix has been added containing lists of the more common Mosses, Lichens, and Seaweeds. The list of Lichens has been kindly furnished by Mr. Brebner.

As it is the aim of the Association to form an exhaustive list of the plants of the district, any of

the members of the committee will be glad to receive suggestions, corrections, and names of additional plants. If the present publication be well received, and found useful, a second and more complete edition may in course of time be issued. For further information regarding the *Alpine Flora of Forfarshire*, and also for more complete lists of the Grasses, Mosses, Fungi, &c., we would refer our readers to the forthcoming work, 'A Guide to the Botany of the North-East of Scotland,' by the Rev. John Ferguson, Fearn, and Mr. J. Roy, Aberdeen.

With these words of explanation the Committee issue this list, in the hope that it may aid and encourage those who are just entering on the study of this interesting and elevating science.

CLASS I.—DICOTYLEDONS.

DIVISION I.—POLYPETALÆ.

SUB-DIVISION I.—THALAMIFLORÆ.

ORDER 1.—RANUNCULACEÆ.

- THALICTRUM minus*, Lesser Meadow-Rue.
Links east and west of Arbroath, common.
- ANEMONE nemorosa*, Wood Anemone.
Woods, common.
- RANUNCULUS aquatilis*,* Water Crowfoot.
Pools and ditches, common.
- Sub.-sp. peltatus.* } Both in Loch of Rescobie.
Sub.-sp. circinatus. }
- R. hederaceus*, Ivy-leaved Crowfoot.
Ditches, frequent.
- R. sceleratus*, Celery-leaved Crowfoot.
Wet places, occasionally.
- R. Flammula*, Lesser Spearwort.
Meadows and bogs, common.
- R. Lingua*, Great Spearwort.
Loch margins, occasionally.
- R. acris*, Upright Meadow-Crowfoot, Buttercup.
Roadsides, very common.

* Messrs Knox, Graham, and Sturrock have found in the Loch of Rescobie a Batrachian *Ranunculus*, flowering and fruiting in deep water. The species has not yet been determined.

- RANUNCULUS repens*, Creeping Crowfoot.
Roadsides, very common.
- R. bulbosus*, Bulbous Crowfoot.
Sandy pastures, frequent.
- R. ficaria*, Pilewort, Lesser Celandine.
Damp and shady places, common.
- CALTHA palustris*, Marsh Marigold.
Marshes, common.
- C. radicans*,
A plant, which will probably prove to
be *C. radicans*, was discovered by Mr.
W. Graham, at Reswallie, in the parish
of Rescobie.
- TROLLIUS europæus*, Globe-flower, Lucken-gowan.
Moors, not frequent.

ORDER 2.—*BERBERIDÆE*.

- BERBERIS vulgaris*, Common Barberry.
Hedges, frequent.

ORDER 3.—*NYMPHÆACEÆ*.

- NYMPHÆA alba*, White Water-lily.
Lochs of Rescobie, Balgavies, &c.
- NUPHAR lutea*, Yellow Water-lily, Brandy-bottle.
Lochs of Rescobie, Balgavies, &c.

ORDER 4.—*PAPAVERACEÆ*.

- PAPAVER Rhœas*, Common Red Poppy.
Cornfields, common.

- PAPAVER dubium, Long smooth-headed Poppy.
Cultivated fields, common.
P. Argemone, Long prickly-headed Poppy.
Fields, frequent.

ORDER 4.*—FUMARIACEÆ.

- FUMARIA officinalis, Common Fumitory.
Cultivated fields, common.

ORDER 5.—CRUCIFERÆ.

- CAKILE maritima, Purple Sea-rocket.
Sandy sea-shore, frequent.
RAPHANUS Raphanistrum, Wild Radish.
Cultivated fields, occasionally.
SINAPIS arvensis, Wild Mustard, Charlock, 'Scalies.'
Cultivated fields, very common.
BRASSICA Rapa, Turnip.
Waste places.
SISYMBRIUM officinale, Common Hedge-Mustard.
Waysides, common.
ERYSIMUM orientale, Hare's Ear Treacle-Mustard.
Gathered in 1873 on the coast near Monifieth.
HESPERIS matronalis, Common Dame's Violet.
Occasionally, as a garden-escape.
CARDAMINE pratensis, Cuckoo-flower, Lady's Smock.
Wet meadows and sides of streams, common.
C. hirsuta, Hairy Bitter-cress.
Damp places, frequent.
ARABIS hirsuta, Hairy Rook-cress.
Dry banks west of Arbroath, frequent.

- BARBAREA vulgaris**, Yellow Rocket.
Waste places and sides of streams, frequent.
- NASTURTIUM officinale**, Common Water-cress.
Ditches and wet places, frequent.
- COCHLEARIA officinalis**, Common Scurvy-grass.
Coast east of Arbroath, common.
- DRABA (Erophila) verna**, Common Whitlow-grass.
Dry banks west of Arbroath, frequent.
- D. muralis**, Speedwell-leaved Whitlow-grass.
About Forfar, rare.
- TEESDALIA nudicaulis**, Naked-stalked Shepherd-cress
Links, rare.
- CAPSELLA Bursa-pastoris**, Shepherd's Purse.
Roadsides, very common.
- LEPIDIUM Smithii**, Smooth-field Pepperwort.
Waste places, not common.

ORDER 6.—RESEDACÆ.

- RESEDA Luteola**, Dyer's-weed.
Rocky coast about Dundee, plentiful.

ORDER 7.—CISTACÆ.

- HELIANTHEMUM vulgare**, Common Rock Rose.
Rocks and dry banks, occasionally.

ORDER 8.—VIOLACÆ.

- VIOLA palustris**, Marsh Violet.
Moist places, occasionally.

- Viola canina*, Dog Violet.
Hedge banks and woods, common.
V. tricolor, Wild Pansy.
Fields and waste places, very common.

ORDER 9.—*DROSERACEÆ*.

- Drosera rotundifolia*, Round-leaved Sundew.
Boggy moors, occasionally.

ORDER 10.—*POLYGALEÆ*.

- Polygala vulgaris*, Common Milkwort.
Woods and heaths, common.

ORDER 12.—*CARYOPHYLLÆÆ*.

- Dianthus deltoides*, Maiden Pink.
Cliffs east of Arbroath, frequent.
Silene inflata, Bladder Campion.
Waysides and waste ground, frequent.
S. maritima, Sea Campion.
Cliffs east of Arbroath, common.
Lychnis vespertina, White Campion.
Roadsides, frequent.
L. diurna, Red Campion.
Damp shady places, common.
L. Flos-cuculi, Ragged Robin.
Moist meadows, common.
Githago segetum, Corn-cockle.
Cornfields, common.

- CERASTIUM tetrandrum*, Four cleft Mouse-ear
Chickweed.
Waste places, common.
- C. triviale*, Narrow-leaved Mouse-ear Chickweed.
Waste places, common.
- C. glomeratum*, Broad-leaved Mouse-ear Chickweed.
Dry places, frequent.
- C. arvense*, Field Mouse-ear Chickweed.
Waysides, occasionally.
- STELLARIA media*, Common Chickweed.
Waste places, everywhere.
- S. Holostea*, Greater Stitchwort.
East of Arbroath, &c., frequent.
- S. graminea*, Lesser Stitchwort.
Ditch-banks and woods, common.
- S. uliginosa*, Bog Stitchwort.
Marshes and ditches, frequent.
- ARENARIA serpyllifolia*, Thyme-leaved Sandwort.
Sandy banks, frequent.
- A. (Honckenya) peploides*, Sea Purslane,
Sea-coast, common.
- SAGINA procumbens*, Procumbent Pearlwort.
Dry places, common.
- S. ciliata*, Ciliated Pearlwort.
Dry places, rare.
- S. nodosa*, Knotted Pearlwort.
Moist and sandy ground, sparingly.
- SPIRGULA arvensis*, Corn-Spurrey.
Cultivated fields, common.
- SPIRGULARIA rubra*, Field Sandwort-Spurrey.
Roadsides, sparingly.

SPERGULARIA marina, Sea-side Sandwort-Spurrey.
Sea-cliffs, occasionally.

ORDER 12 *—ILLECEBRACÆ.

SOLEBRANTHUS annuus, Annual Knawel.
Cultivated fields, common.

ORDER 13.—PORTULACÆ.

MONTIA fontana, Water Blinks.
Ditches and wet places, frequent.

ORDER 16.—HYPERICINÆ.

HYPERICUM perforatum, Common St. John's Wort.
Hedge banks and thickets, frequent.

H. quadrangulum, Square-stalked St. John's Wort.
Moist places, frequent.

H. humifusum, Trailing St. John's Wort.
Roadsides, rare.

H. pulchrum, Small St. John's Wort.
Copses and heaths, common.

H. hirsutum, Hairy St. John's Wort.
Thickets, frequent.

ORDER 17.—MALVACÆ.

MALVA sylvestris, Common Mallow.
Roadsides, occasionally.

M. rotundifolia, Dwarf Mallow.
Coast west of Arbroath.

ORDER 19.—*LINEÆ*.

LINUM catharticum, Purging Flax.
Sandy ground, common.

ORDER 20.—*GERANIACEÆ*.

GERANIUM sanguineum, Bloody Crane's-bill.
Coast east of Arbroath, frequent.

G. phœum, Dusky Crane's-bill.
Near Clocksbriggs.

G. sylvaticum, Wood Crane's-bill.
Woods, occasionally.

G. pratense, Blue Meadow Crane's-bill.
Coast eastwards, frequent.

G. molle, Dove's-foot Crane's-bill.
Waysides and meadows, abundant.

G. dissectum, Jagged-leaved Crane's-bill.
Ditch-banks and waysides, frequent.

G. lucidum, Shining Crane's-bill.
Near Kinnettles.

G. Robertianum, Herb Robert, Stinking Crane's-bill.
Roadsides and woods, common.

ERODIUM cicutarium, Hemlock Stork's-bill.
Waysides near the coast.

OXALIS Acetosella, Common Wood-sorrel.
Woods, common.

SUB-DIVISION II.—CALYCIFLORÆ.

ORDER 25.—LEGUMINOSÆ.

- ULEX europæus**, Common Whin.
 Waysides and woods, abundant.
- GENISTA anglica**, Petty Whin.
 Heaths and moors, frequent.
- SAROTHAMNUS scoparius**, Common Broom.
 Waysides and heaths, common.
- ONONIS arvensis**, Rest-Harrow, Wild Liquorice.
 Sandy ground and roadsides, frequent.
- ANTHYLLIS Vulneraria**, Kidney-vetch, Lady's Fingers.
 Cliffs east of Arbroath, common.
- MEDICAGO sativa**, Purple Medick.
 Links near Broughty Ferry.
- M. lupulina**, Black Medick.
 Roadsides and railway banks, common.
- MELILOTUS officinalis**, Common Melilot.
 Waste places, occasionally.
- TRIFOLIUM pratense**, Red Clover.
 Cultivated fields, and cliffs eastwards, common.
- T. medium**, Zigzag Trefoil.
 Woods and banks, occasionally.
- T. arvense**, Hare's-foot Trefoil.
 Sandy ground near the coast, frequent.
- T. repens**, White or Dutch Clover.
 Fields and waysides, common.
- T. procumbens**, Hop Trefoil.
 Roadsides and banks, common.
- T. minus**, Lesser Yellow Trefoil.
 West links, frequent.

- LOTUS corniculatus**, Common Bird's-foot Trefoil.
 Roadsides and banks, common.
- L. major**, Narrow-leaved Bird's-foot Trefoil.
 Meadows and ditch banks, frequent.
- ASTRAGALUS hypoglottis**, Purple Mountain Milk-Vetch.
 Sandy ground along the coast, abundant.
- A. glycyphyllos**, Sweet Milk-Vetch.
 Cliffs, occasionally.
- ONOBRYCHIS sativa**, Sain-foin.
 West of Arbroath, an escape from cultivation.
- VICIA hirsuta**, Hairy Vetch.
 Cornfields and railway banks, common.
- V. Cracca**, Tufted Vetch.
 Waysides and hedges, common.
- V. sylvatica**, Wood Vetch.
 Cliffs, frequent.
- V. sepium**, Bush Vetch.
 Roadsides, common.
- V. lutea**, Rough-podded Yellow Vetch.
 Cliffs, rare.
- V. sativa**, Common Vetch.
 Waysides, occasionally, an escape from cultivation.
- V. lathyroides**, Spring Vetch.
 Sandy banks, occasionally.
- LATHYRUS pratensis**, Meadow Vetchling.
 Roadsides, common.
- L. sylvestris**, Narrow-leaved Everlasting Pea.
 Cliffs, occasionally.
- L. macrorrhizus** (*Orobanchis tuberosus*), Tuberous Bitter-Vetchling.
 Heaths and woods, plentiful.

ORDER 26.—ROSACEÆ.

- PRUNUS spinosa**, Sloe.
Roadsides and hedges, occasionally.
- P. Padus**, Bird Cherry.
Woods, occasionally.
- P. Avium**, Gean.
Woods, common.
- SPIRÆA Ulmaria**, Queen of the Meadow.
Banks of streams, common.
- S. salicifolia**, Willow-leaved Spiræa.
A garden escape, occasionally.
- S. Filipendula**, Dropwort.
A garden escape, occasionally.
- AGRIMONIA Eupatoria**, Common Agrimony.
Cliffs, frequent.
- ALCHEMILLA arvensis**, Parsley-Piert.
Cultivated fields, common.
- A. vulgaris**, Common Lady's-mantle.
Ditches and waysides, common.
- POTENTILLA Fragariastrum**, Strawberry-leaved
Cinquefoil.
Woods and thickets, frequent.
- P. verna**, Spring Cinquefoil.
Sandy ground, rare.
- P. Tormentilla**, Tormentil.
Woods and heaths, common.
- P. reptans**, Creeping Cinquefoil.
Roadsides, sparingly.
- P. anserina**, Silver-weed.
Waysides, very common.

- COMARUM palustre, Marsh Cinquefoil.
Marshes, abundant.
- FRAGARIA vesca, Wood Strawberry.
Woods, frequent.
- RUBUS Idæus, Raspberry.
Woods, common.
- R. fruticosus, Bramble.
Thickets and woods, common.
- GEUM urbanum, Wood Avena.
Waysides and woods, common.
- G. rivale, Water Avena.
Banks of streams, common.
- ROSA spinosissima, Scotch Rose.
Heaths and sandy ground, frequent.
Sub.-sp. pimpinellifolia,
Pitscandly Hill.
- R. mollissima, } Villous Rose.
Var. pseudo rubiginosa, }
Both on Pitscandly Hill.
- R. rubiginosa, Sweet-briar.
West of Arbroath, not common.
- R. canina, Dog Rose.
Thickets and roadsides, common.
- Var. verticillacantha*, }
Var. dumalis, } all on Pitscandly Hill.
Var. lutetiana, }
- CRATEGUS Oxyacantha, Hawthorn.
Hedges and thickets, very common.
- PYRUS Aucuparia, Mountain Ash, Rowan-tree.
Woods, frequent.

ORDER 27.—LYTHRACEÆ.

- PEPLIS** *Portula*, Water Purslane.
Near Forfar, rare.

ORDER 28.—ONAGRARIÆ.

- EPILOBIUM** *angustifolium*, Rose-bay Willow-herb.
Banks of streams, occasionally.
E. *hirsutum*, Great Hairy Willow-herb.
Ditches, frequent.
E. *montanum*, Broad Smooth-leaved Willow-herb.
Roadsides, common.
E. *tetragonum*, Square-stalked Willow-herb.
Ditches, occasionally.
E. *palustre*, Narrow-leaved Willow-herb.
Marshes, frequent.

ORDER 28.*—HALORAGÆÆ.

- HIPPURIS** *vulgaris*, Mare's Tail.
Ditches and pools, occasionally.
MYRIOPHYLLUM *spicatum*, Spiked Water Milfoil.
Pools and streams, frequent.
CALLITRICHE *autumnalis*, Autumnal Water Star-wort.
Loch Feithy, abundant.
C. *hamulata*, Vernal Water Star-Wort.
Pools at Rescobie, rare.

- HELOSCIADIUM inundatum*, Least Marsh-wort.
Pools and ditches, occasionally.
- ÆGOPODIUM Podagraria*, Gout-weed, Bishop-weed.
Waysides, very common.
- CARUM Carui*, Common Caraway.
Waste places, occasionally—a garden escape.
- BUNIUM flexuosum*, Common Earth-nut.
Pastures, common.
- PIMPINELLA Saxifraga*, Common Burnet Saxifrage.
Sandy ground along the coast, frequent.
- SIUM angustifolium*, Narrow-leaved Water-Parsnep.
Loch margins, occasionally.
- LIGUSTICUM scoticum*, Scottish Lovage.
Rocks east of Arbroath, frequent.
- ANGELICA sylvestris*, Wild Angelica.
Watery places, occasionally.
- HERACLEUM Sphondylium*, Cow-Parsnep, Hog-weed.
Waysides, &c., very common.
- TORILIS Anthriscus*, Upright Hedge-Parsley.
Roadsides, common.
- CHÆROPHYLLUM (Anthriscus) sylvestre*, Wild-Beaked Parsley.
Roadsides, occasionally.
- C. temulum*, Rough Chervil.
Ditch banks, occasionally.
- MYRRHIS odorata*, Sweet Cicely.
River sides, occasionally.
- SOANDIX Pecten-Veneris*, Shepherd's Needle or Venus's Comb.
Cornfields, common.

- Daucus Carota*, Wild Carrot.
 Dry banks, occasionally.
Conium maculatum, Common Hemlock.
 East of Arbroath, frequent.

ORDER 34.—*ARALIACEÆ*.

- Hedera Helix*, Ivy.
 Cliffs and hedges, frequent.

*SUB-DIVISION III.**MONOPETALÆ OR GAMOPETALÆ.*ORDER 37.—*CAPRIFOLIACEÆ*.

- Sambucus nigra*, Common Elder.
 Railway banks and hedges, occasionally.
Lonicera Periclymenum, Honeysuckle or Woodbine.
 Cliffs and hedges, frequent.
Linnaea borealis, Two-flowered Linnaea.
 Woods, rare.

ORDER 38.—*RUBIACEÆ*.

- Galium verum*, Yellow Bedstraw.
 Roadsides, common.
G. saxatile, Smooth heath Bedstraw.
 Woods and heaths, common.
G. palustre, White water Bedstraw.
 Wet places, common.

- GALIUM* Aparine, Goose-grass or Cleavers.
Hedges and thickets, common.
- SHERARDIA* arvensis, Field Madder.
Cornfields, frequent.
- ASPERULA* odorata, Woodruff.
Occasionally, as a garden escape.

ORDER 39.—VALERIANÆ.

- VALERIANA* officinalis, Great wild Valerian.
Moist and shady places, occasionally.
- VALERIANELLA* olitoria, Lamb's Lettuce.
West Links, not frequent.

ORDER 40.—DIPSACÆ.

- SCABIOSA* succisa, Devil's bit Scabious.
Pastures and roadsides, frequent.
- S. columbaria*, Small Scabious.
Links west of Arbroath, frequent.
- S. (Knautia) arvensis*, Field Scabious.
Waysides, common.

ORDER 41.—COMPOSITÆ.

- CARDUUS* lanceolatus, Spear Thistle.
Waysides, common.
- C. palustris*, Marsh Thistle.
Marshes, frequent.
- C. arvensis*, Creeping Thistle.
Waysides, very common.
- C. tenuiflorus*, Slender-flowered Thistle.
Sandy places near Arbroath, not common.

<i>CARLINA vulgaris</i> ,	Carlina Thistle.
Cliffs, occasionally.	
<i>ARCTIUM Lappa</i> ,	Common Burdock.
Waste places, frequent.	
<i>CENTAUREA nigra</i> ,	Black Knapweed.
Waysides, very common.	
<i>C. Scabiosa</i> ,	Greater Knapweed.
Pastures east of Arbroath.	
<i>C. Cyanus</i> ,	Blue Bottle or Blawort.
Cornfields, frequent.	
<i>CHRYSANTHEMUM segetum</i> ,	Corn Marigold.
Cornfields, frequent.	
<i>C. Leucanthemum</i> ,	Ox-eye Daisy.
Waysides and fields, common.	
<i>MATRICARIA inodora</i> ,	Corn Feverfew.
Waste places, common.	
<i>M. Parthenium</i> ,	Common Feverfew.
Waste places, occasionally.	
<i>TANACETUM vulgare</i> ,	Tansy.
Roadsides, occasionally.	
<i>ACHILLEA Millefolium</i> ,	Yarrow.
Roadsides, very common.	
<i>A. Ptarmica</i> ,	Sneeze-wort.
Cornfields, common.	
<i>ARTEMISIA vulgaris</i> ,	Common Mugwort.
Sides of fields, frequent.	
<i>A. maritima</i> ,	Sea Wormwood.
Cliffs, rare.	
<i>FILAGO germanica</i> ,	Common Filago or Impious weed.
Waste places, not common.	

- FILAGO minima*, Least Filago.
Links west of Arbroath, frequent.
- GNAFALHIUM uliginosum*, Marsh Cud-weed.
Wet places, frequent.
- G. sylvaticum*, Highland Cud-weed.
Sandy ground, occasionally.
- ANTENNARIA dioica*, Cat's-foot.
Dry heaths, occasionally.
- SENECIO aquaticus*, Marsh Ragwort.
Marshes, frequent.
- S. vulgaris*, Common Groundsel.
Roadsides, everywhere.
- S. sylvaticus*, Mountain Groundsel.
Waste places, frequent.
- S. Jacobea*, Ragwort or 'Weeby.'
Pastures and roadsides, very common.
- BELLIS perennis*, Common Daisy.
Everywhere.
- ERIGERON acris*, Blue Flea-bane.
Links west of Arbroath, occasionally.
- ASTER Tripolium*, Michaelmas Daisy.
Salt marshes, occasionally.
- TOSSILAGO Farfara*, Common Colt's foot.
Roadsides and fields, very common.
- PETASITES vulgaris*, Butterbur.
Sides of streams, common.
- EUPATORIUM cannabinum*, Hemp Agrimony.
Cliffs, occasionally.
- ORONCHOS Intybus*, Wild Succory.
Fields, rare.

- LAPSANA communis*, Nipplewort.
 Waysides, common.
- HYPOCHÆRIS radicata*, Long-rooted Cat's-ear.
 Waysides and margins of fields.
- LEONTODON hispidus*, Rough Hawk-bit.
 Waysides, frequent.
- L. autumnalis*, Autumnal Hawk-bit.
 Pastures, frequent.
- TRAGOPOGON pratensis*, Goat's-beard.
 Railway banks and sandy sea-shores.
- TARAXACUM officinale*, Common Dandelion.
 Abundant everywhere.
- SONCHUS oleraceus*, Common Sow-thistle.
 Cultivated fields, common.
- S. arvensis*, Corn Sow-thistle.
 Cornfields, frequent.
- CREPIS virens*, Smooth Hawk's-beard.
 Pastures and waste ground, frequent.
- HIERACTUM Pilosella*, Mouse-ear Hawk-weed.
 Pastures, common.
- H. sylvaticum* (*H. vulgatum*), Wood Hawk-weed.
 Woods, frequent.
- H. murorum*, Wall Hawk-weed.
 Woods and cliffs, occasionally.

ORDER 42.—CAMPANULACÆ.

- CAMPANULA glomerata*, Clustered Bell-flower.
 Sea-cliffs, frequent.
- C. rotundifolia*, Harebell.
 Pastures and waysides, common.
- C. rapunculoides*, Creeping Bell-flower.
 Railway banks, occasionally.

ORDER 43.—ERICACEAE.

VACCINIUM Myrtillus, **Blueberry.**
Woods, frequent.

V. Oxycoccus, Cranberry.
Damp heaths, not common.

V. Vitis Idæa, **Whortle-berry.**
Sidlaw Hills.

ERICA Tetralix, Cross-leaved Heath.
Woods and heaths, common.

E. cinerea, **Fine-leaved Heath.**
Heaths, abundant.

CALLUNA vulgaris, Ling or Heather.
Heaths, &c., plentiful.

Pyrola minor, Lesser Winter-green.
Woods, occasionally.

ORDER 44.—JASMINACEAE.

FRAXINUS excelsior, Common Ash.
Frequent.

LIGUSTRUM vulgare, Privet.
Hedges, &c., frequent.

ORDER 45.—APOCYNACEÆ.

VINCA minor, Lesser Periwinkle.
Woods, occasionally.

ORDER 46.—GENTIANEE.

GENTIANA amarella, Small-flowered Gentian.
Links west of Arbroath, frequent.

- GENTIANA campestris*, Field Gentian.
Cliffs, frequent.
MENYANTHES trifoliata, Bog-bean.
Marshes, frequent.

ORDER 48.—CONVOLVULACEÆ.

- CONVOLVULUS soldanella*, Sea Bindweed.
Links west of Arbroath.
C. arvensis, Field Bindweed.
Near Broughty Ferry, rare.

ORDER 49.—SOLANEE.

- SOLANUM Dulcamara*, Woody Nightshade.
Amongst brushwood, occasionally.
HYOSCYAMUS niger, Common Henbane.
Near Broughty Ferry, rare.

ORDER 50.—SCROPHULARINEÆ.

- SCROPHULARIA nodosa*, Knotted Figwort.
Woods and shady places, frequent.
S. aquatica, Water Figwort.
Craig-Mill Den, rare.
DIGITALIS purpurea, Foxglove.
Woods, occasionally.
LINARIA vulgaris, Common Toad-Flax.
Waste places, not common.
MIMULUS luteus, Yellow Mimulus.
River banks, not common.
VERONICA hederifolia, Ivy-leaved Speedwell.
Waste places, common.

- VERONICA agrestis*, Field Speedwell.
 Waste places, very common.
V. arvensis, Wall Speedwell.
 Dry banks, &c., common.
V. serpyllifolia, Thyme-leaved Speedwell.
 Waysides, common.
V. officinalis, Common Speedwell.
 Woods and waysides, frequent.
V. Chamaedrya, Germander Speedwell.
 Waysides, abundant.
V. scutellata, Marsh Speedwell.
 Sides of pools, not common.
V. Anagallis, Water Speedwell.
 Moist places, occasionally.
V. Beccabunga, Brook-lime.
 Ditches, common.
EUPHRASIA officinalis, Eyebright.
 Pastures and waste places, abundant.
BARTSIA odontites, Red Bartsia.
 Fields and waysides, frequent.
PEDICULARIS palustris, Red Rattle.
 Marshy places, frequent.
P. sylvatica, Dwarf Red Rattle.
 Heaths and moors, common.
RHINANTHUS crista-galli, Yellow Rattle.
 Waste places, frequent.
R. major, Greater Yellow Rattle.
 Near East Haven, plentiful.
MELAMPYRUM pratense, Cow-Wheat.
 Heaths, occasionally.

ORDER 53.—LABIATÆ

<i>MENTHA sylvestris</i> ,	Horse-mint,
Moist places, occasionally.	
<i>M. aquatica</i> ,	Hairy-mint.
Banks of streams, common.	
<i>M. arvensis</i> ,	Corn-mint.
Cornfields, frequent.	
<i>THYMUS Serpyllum</i> ,	Wild Thyme.
Cliffs and links near Arbroath.	
<i>CALAMINTHA Acinos</i> ,	Basil Thyme.
West Links.	
<i>ORIGANUM vulgare</i> ,	Marjoram.
Shady dens, rare.	
<i>NEPETA Glechoma</i> ,	Ground Ivy.
Waste places and woods, common.	
<i>PRUNELLA vulgaris</i> ,	Self Heal, 'Carmylie Clover.'
Fields and waysides, abundant.	
<i>SCUTELLARIA galericulata</i> ,	Common Skullcap.
Marshes, occasionally.	
<i>STACHYS palustris</i> ,	Marsh Woundwort.
Ditch banks and margins of moist fields.	
<i>S. sylvatica</i> ,	Hedge Woundwort.
Hedge-sides and shady places, frequent.	
<i>S. arvensis</i> ,	Corn Woundwort.
Cornfields, frequent.	
<i>GALEOPSIS Tetrahit</i> ,	Common Hemp-nettle.
Fields and waste places, abundant.	
<i>G. versicolor</i> ,	Large-flowered Hemp-nettle.
Cornfields, occasionally.	

- LAMIUM** *purpureum*, Red Dead-nettle.
 Banks and waste places, common.
L. amplexicaule, Henbit Dead-nettle.
 Waste places, frequent.
ASUGA *reptans*, Bugle.
 Sides of streams, occasionally.
TEUORIUM *scorodonia*, Wood-sage.
 Woods and dens, occasionally.

ORDER 54.—BORAGINÆ.

- EPHIUM** *vulgare*, Viper's Bugloss.
 Links near Arbroath and railway banks, occasionally.
MERTENSIA *maritima*, Sea-side Gromwell.
 Near Redhead, rare.
LITHOSPERMUM *arvense*, Corn Gromwell.
 Cornfields, rare.
MYOSOTIS *palustris*, Marsh Forget-me-not.
 Marshes and damp places, common.
M. repens, Creeping Forget-me-not.
 Moist places, not common.
M. arvensis, Field Forget-me-not.
 Fields and waste places, common.
M. cæspitosa, Tufted-water Forget-me-not.
 Margins of Lochs of Rescobie and Balgavies, not
 common.
M. versicolor, Yellow and Blue Forget-me-not.
 Damp meadows, occasionally.
ANCHUSA *arvensis*, Small Bugloss.
 Fields, occasionally.

- ANCHUSA sempervirens*, Evergreen Alkanet.
 Among ruins, occasionally.
SYMPHYTUM officinale, Common Comfrey.
 Banks of streams, frequent.
S. tuberosum, Tuberous Comfrey.
 Shady woods, occasionally.

ORDER 55.—PINGUICULACEÆ

- PINGUICULA vulgaris*, Common Butterwort.
 Moist places, frequent.
UTRICULARIA vulgaris, Greater Bladderwort.
 Marshes at Restenet, occasionally.
U. minor, Lesser Bladderwort.
 Marshes at Balgavies, not common.

ORDER 56.—PRIMULACEÆ.

- PRIMULA vulgaris*, Common Primrose.
 Banks and shady places, abundant.
P. veris, Cowslip.
 Cliffs, not common.
TRIENTALIS europæa, Chickweed Winter-green.
 Woods, rare.
LYSIMACHIA thyrsiflora, Loose-strife.
 Margins of Rescobie Loch, abundant.
L. nemorum, Yellow Pimpernel.
 Moist banks, also Sidlaw Hills, occasionally.
ANAGALLIS arvensis, Scarlet Pimpernel.
 Cornfields, frequent.
GLAUX maritima, Sea-milkwort.
 Salt marshes and wet banks on sea-shore.

ORDER 57.—PLUMBAGINEÆ.

ALUMBA *maritima*, Thrift or Sea-pink.
Cliffs, abundant.

ORDER 58.—PLANTAGINEÆ.

PLANTAGO *major*, Greater Plantain.
Waysides, abundant.

P. media, Hoary Plantain.

Pastures, rare.

P. lanceolata, Ribwort Plantain, 'Carl Doddie.'

Waysides, abundant.

P. maritima, Seaside Plantain.

Seashore, and sometimes inland.

P. coronopus, Buck's-horn Plantain.

Carnoustie Links and Redhead, not uncommon.

LEPTOCRELLA *lacustris*, Shore-weed.

Banks of lakes, frequent.

DIVISION III.

APETALÆ OR INCOMPLETÆ.

ORDER 61.—CHENOPODIACEÆ.

- SALSOLA** Kali, Prickly Saltwort.
Sea-coast west of Arbroath, frequent.
- SALICORNIA** herbacea, Jointed Glasswort.
Banks of Montrose Basin.
- CHENOPODIUM** album, White Goose-foot.
Fields and waste places, frequent.
- C. murale**, Nettle-leaved Goose-foot.
Waysides, occasionally.
- C. Bonus-Henricus**, Mercury Goose-foot.
Waysides and waste ground, occasionally.
- ATRIPLEX** littoralis, Sea Orache.
Sea-shore, west of Arbroath.
- A. angustifolia**, Spreading narrow-leaved Orache.
Roadsides and cornfields, occasionally.
- A. erecta**, Upright spear-leaved Orache.
Cornfields near Guthrie.

ORDER 62.—POLYGONACEÆ.

- RUMEX** crispus, Curled Dock.
Waysides, abundant.
- R. obtusifolius**, Broad-leaved Dock.
Waste ground, common.
- R. Acetosa**, Common Sorrel, 'Sourrocka.'
Woods and waysides, common.

- RUMEX** *Acetosella*, Sheep's Sorrel.
 Dry banks and pastures, frequent.
- POLYGONUM** *amhibium*, Amphibious *Persicaria*.
 Lakes and marshy pools.
- P. aviculare*, Common Knot-grass.
 Waysides and borders of fields.
- P. Persicaria*, Spotted *Persicaria*.
 Waste places and borders of fields.
- P. Convolvulus*, Climbing Buck-wheat.
 Cornfields, common.
- P. viviparum*, Viviparous Alpine Bistort.
 Near Forfar, not uncommon.

ORDER 67.—EMPETRACEÆ.

- EMPETRUM** *nigrum*, Black Crow-berry.
 On hills, occasionally.

ORDER 68.—EUPHORBIACEÆ.

- MERCURIALIS** *perennis*, Dog's Mercury.
 Shady dens, frequent.
- EUPHORBIA** *Helioscopia*, Sun Spurge, 'Little Goody.'
 Cornfields, frequent.
- E. peplus*, Petty Spurge.
 Cornfields and waste places, common.
- E. exigua*, Dwarf Spurge
 Cornfields, occasionally.

ORDER 70.—CERATOPHYLLACEÆ.

- CERATOPHYLLUM** *demersum*, Common Horn-wort.
 Lochs of Rescobie and Balgavies, frequent.

ORDER 71.—URTICACEÆ.

- PARIETARIA** *diffusa*, Wall Pellitory.
 Cliffs near Arbroath, abundant.

- URTICA urens,** Small Nettle.
 Wayside and waste places, abundant.
U. dioica, Great Nettle.
 Hedge-sides and waste places, common.
HUMULUS Lupulus, Common Hop.
 Near Forfar.
ULMUS montana, Broad-leaved or Wych Elm.
 Woods and hedges, occasionally.

ORDER 72.—AMENTIFERÆ.

- QUERCUS Robur,** Common British Oak.
 Frequent ; probably introduced.
FAGUS sylvatica, Beech.
 Plentiful in woods ; probably planted.
CORYLUS Avellana, Hazel Nut.
 Sides of streams and in hedges.
CARPINUS Betulus, Hornbeam.
 Woods and hedges ; probably introduced.
ALNUS glutinosa, Alder.
 Sides of streams.
BETULA alba, Common Birch.
 Occasionally found in moist places.
MYRICA Gale, Bog Myrtle.
 Marshy places.
POPULUS alba, }
P. tremula, } Poplar.
P. nigra, }
 Frequent throughout the country.
SALIX pentandra, Sweet Bay-leaved Willow.
 Restenet, and marshy banks near Rescobie Loch.
S. Alba, Common White Willow.
 Frequent, but probably introduced.

- Var. S. Vitellina*, Yellow Willow, Golden Osier.
Marshy ground, as at Rescobie.
- S. undulata*, Sharp-leaved Triandrous Willow.
Banks of Rescobie Loch.
- S. triandra*, Long-leaved Triandrous Willow.
Banks of Balgavies Loch ; probably planted.
- Var. S. amygdalina*, Almond-leaved Willow.
Banks of Feithy Water.
- S. viminalis*, Common Osier, 'Saugh.'
Banks of streams, frequent.
- S. cinerea*, Grey Sallow.
Plentiful in many places.
- Var. S. aquatica*, Water Sallow.
Banks of Rescobie Loch, &c.
- S. aurita*, Round-eared Sallow.
Sands of Barrie, and also inland, occasionally.
- S. Caprea*, Great Round-leaved Sallow.
Frequent by the sides of streams.
- S. fusca*, Dwarf Silky Willow.
Sandy sea-shores, &c., plentiful.
- S. Forbyana*, Fine Basket Osier.
Foot of cliffs near Auchmithie, planted.

ORDER 73.—CONIFERÆ.

- PINUS sylvestris*, Scotch Fir.
Abundant, but generally planted.
- JUNIPERUS communis*, Common Juniper.
Woods, &c., not common.
- TAXUS baccata*, Yew
Occasionally, but probably introduced.

CLASS II.—MONOCOTYLEDONS.

DIVISION I.—PETALOIDEÆ.

ORDER 74.—*TYPHACEÆ*

- TYPHA latifolia*, Great Reed-mace.
 River banks, occasionally.
- SPARGANIUM ramosum*, Branched Bur-reed.
 Ditches and marshes, frequent.
- S. simplex*, Unbranched Bur-reed.
 Ditches and marshes, occasionally.
- S. minimum*, Floating Bur-reed.
 Lochs of Rescobie, &c., occasionally.

ORDER 76.—*LEMNACEÆ*.

- LEMNA minor*, Lesser Duck-weed.
 Still pools and ditches, plentiful.

ORDER 77.—*NAIADACEÆ*.

- POTAMOGETON natans*, Broad-leaved Pond-weed.
 Ponds, ditches, streams, and lakes, plentiful.

The following list of the other species is adapted from two papers on 'The Botany of the Loch of Rescobie,' by Mr A. Sturrock. *

POTAMOGETON zosterifolius.

Plentiful in the pools at the head of the Loch ; less so in the Loch.

* 'Scottish Naturalist,' October 1880 and October 1881.

POTAMOGETON obtusifolius,	Grassy Pond-weed.
Same situations as <i>P. zosterifolius</i> .	
<i>P. mucronatus</i> .	—
	Occasionally.
<i>P. praelongus</i> ,	Long-stalked Pond-weed.
	Occasionally.
<i>P. heterophyllus</i> ,	Various-leaved Pond-weed.
On south side of the Loch.	
<i>P. nitens</i> , Web. <i>var. curvifolius</i> .	—
	Very rare.
<i>P. lucens</i> ,	Shining Pond-weed.
	Common.
<i>Var. P. acuminatus</i> .	—
	Rare.
<i>P. perfoliatus</i> .	—
	Common.
<i>P. crispus</i> ,	Curled Pond-weed.
	Common.
<i>P. pusillus</i> ,	Small Pond-weed.
Abundant on the north side of the Loch.	
<i>P. pectinatus</i> ,	Fennel-leaved Pond-weed.
On the south side of the Loch, rare.	
<i>P. polygonifolius</i> .	—
In ditch leading into the Loch.	
<i>P. rufescens</i> ,	Reddish Pond-weed.
Abundant in the burn between the Lochs.	
<i>P. zizii</i> .	—
	Rare.
<i>P. decipiens</i> .	—
	Rare.

- ZANNICHELLIA palustris*, Common Horned Pond-weed.
Loch of Rescobie, frequent.
ZOSTERA marina, Broad-leaved Grass-wrack.
Sea margin, frequent.

ORDER 78.—*ALISMACEÆ*.

- TRIGLOCHIN palustre*, Marsh Arrow-grass.
Marshy ground.
T. maritimum, Sea-side Arrow-grass.
Salt marshes east of Arbroath, frequent.
ALISMA Plantago, Greater Water Plantain.
Pools, frequent.
A. ranunculoides, Lesser Water Plantain.
Lochs of Rescobie, &c., occasionally.

ORDER 79.—*HYDROCHARIDÆ*.

- STRATIOTES Aloides*, Water Soldier.
Boggy pools as at Rescobie, occasionally.

ORDER 80.—*ORCHIDÆ*.

- ORCHIS mascula*, Purple Orchis.
Woods and cliffs, common.
O. maculata, Spotted Orchis.
Woods, marshy ground, and cliffs, common.
HABENARIA viridis, Frog Orchis.
Moors, occasionally.
H. bifolia, Lesser Butterfly Orchis.
Moors and moist woods, not common.

ORDER 86.—JUNCÆÆ.

- LUZULA pilosa,** Broad-leaved Hairy Wood-rush.
 Woods and hills, not uncommon.
L. sylvatica, Great Hairy Wood-rush.
 Shady woods and banks of streams, plentiful.
L. campestris, Field Wood-rush.
 Heaths, and banks of streams and lakes, common.
L. multiflora, Many-flowered-rush.
 Marshes, as at Rescobie.
JUNCUS communis, Common Rush, or 'Rashes.'
 Wet and marshy ground, common.
Var. 1 J. effusus.
2 J. conglomeratus.
J. squarrosus, Heath-rush.
 Moors, heaths, and marshy ground, common.
J. lamprocarpus, Shining-fruited Jointed-rush.
 Moist places, frequent.
J. uliginosus, Lesser Jointed-rush.
 Bogs, frequent.
J. bufonius, Toad-rush.
 Moist ground, common.
J. balticus, Baltic-rush.
 Sands of Barrie.

DIVISION II.—GLUMACEÆ.

ORDER 87.—CYPERACEÆ.

- SCIRPUS lacustris*, Lake Bulrush.
Forfar, Rescobie, and Balgavies Lochs, abundant.
- S. setaceus*, Bristle-stalked Club-rush.
Wet and marshy places, frequent.
- S. sylvaticus*, Wood Club-rush.
River banks, occasionally.
- ELEOCHARIS palustris*, Creeping Spike-rush.
Margins of lakes, common.
- ERIOPHORUM vaginatum*, Hare's-tail Cotton-grass.
Marshes, frequent.
- E. polystachion*, Broad-leaved Cotton-grass.
Bogs, frequent.
- CAREX pulicaris*, Flea-sedge.
Lake margins.
- C. disticha*, —
Marshes and mossy ditches.
- C. paniculata*, Great Panicked-sedge.
Clocksbriggs wood.
- C. stellulata*, Little Prickly-sedge.
Marshes, as old curling pond, Rescobie.
- C. vulgaris*, Common-sedge.
Marshes, lake margins.
- C. panicea*, Pink-leaved-sedge.
Marshes, lake margins.
- C. pilulifera*, Round-headed-sedge.
Moors, as Forfar golf course.

-
- CAREX flava*, Yellow-sedge.
Boggy heaths, lake margins.
- C. hirta*, Hairy-sedge.
Damp woods, as Turin Hill.
- C. muricata*, Great Prickly-sedge.
Damp copses, as Turin and Finavon Hills.
- C. ovalis*, Oval Spiked-sedge.
Bogs—as Weel Steps, Rescobie.
- C. ampullacea*, Slender-beaked Bladder-sedge.
Bogs, as margins about Culrash.
- C. vesicaria*, Short-beaked Bladder-sedge.
Bogs, as margins about Culrash.
- C. riparia*, Great Common-sedge.
Margin of Loch of Balgavies.
- C. incurva*, Curved-sedge.
Sandy links west of Arbroath.
- C. dioica*, Separate-headed-sedge.
Bogs, not common.
- C. teretiuscula*, Lesser Panicked-sedge.
Marshes, as at Rescobie, plentiful.
- C. aquatilis*, Water-sedge.
Bogs, occasionally.
- C. limosa*, Mud-sedge.
Marsh between Rescobie and Balgavies.
- C. præcox*, Vernal-sedge.
Pastures and dry banks, frequent.
- C. curta*, White-sedge.
Marshy banks of Rescobie Loch.
- C. vulpina*, Great-sedge.
Sea-coast east of Arbroath.
- C. arenaria*, Sea-sedge.
Sandy links, common.

ORDER 88.—GRAMINEÆ.

ANTHOXANTHUM odoratum, Sweet-scented Vernal-grass.

Pastures, common.

PHALARIS arundinacea, Reed Canary-grass.
Sides of lakes and streams, frequent.

ALOPECURUS geniculatus, Floating Fox-tail-grass.
Ditches and moist places, frequent.

A. pratensis, Meadow Fox-tail-grass.
Waysides and pastures, abundant.

PHLEUM pratense, Timothy-grass.
Fields and waysides, plentiful.

P. arenarium, —
Sands of Barry and Links of Montrose, frequent.

AGROSTIS vulgaris, Fine Bent-grass.
Meadows, common.

A. alba, Marsh Bent-grass.
Banks of streams and wet places, frequent.
Var. stolonifera.

Not uncommon along the coast.

A. canina, Brown Bent-grass.
Moist pastures and heaths, common.

A. setacea, Bristle-leaved Bent-grass.
Sidlaw Hills, occasionally.

PSAMMA arenaria, Common Sea-reed.
Sandy sea-shores, frequent.

PHRAGMITES communis, Common-reed.
Lakes and river margins, common.

- MILIUM effusum**, Spreading Millet-grass.
Woods, occasionally.
- AIRA cæspitosa**, Tufted Hair-grass.
Ditches and field borders, common.
- A. flexuosa**, Waved Hair-grass.
Dry pastures and heaths, common.
- A. caryophyllæa**, Silvery Hair-grass.
Gravelly pastures and dry banks, frequent.
- A. præcox**, Early Hair-grass.
Woods and banks, frequent.
- AVENA pratensis**, Narrow-leaved Oat-grass.
Natural pastures, dry banks, &c., not common.
- A. elatior**, Oat-like-grass.
Waysides, ditch banks, &c., common.
- HOLCUS mollis**, Creeping Soft-grass.
Waysides and woods, frequent.
- H. lanatus**, Meadow Soft-grass.
Meadows, pastures, and waysides, common.
- KOELERIA cristata**, Crested Hair-grass.
Natural pastures and rocks, frequent.
- MOLINIA cærulea**, Purple Melic-grass.
Moors and woods, occasionally.
- CATABROSA aquatica**, Water Whorl-grass.
Pools, &c., as at Restenet.
- POA annua**, Annual Meadow-grass.
Common, everywhere.
- P. pratensis**, Smooth-stalked Meadow-grass.
Pastures, waysides, and woods, abundant,
- P. trivialis**, Rough Meadow-grass.
Meadows and waysides, frequent.

- Poa compressa*, Flat-stemmed Meadow-grass.
Wall-tops and dry places, occasionally.
- P. nemoralis*, Wood Meadow-grass.
Woods and shady banks, frequent.
- P. glauca*, Wood Meadow-grass.
Sidlaw Hills.
- P. bulbosa*, Bulbous Meadow-grass.
Sidlaw Hills.
- TRIODIA decumbens*, Decumbent Heath-grass.
Sidlaw Hills.
- GLYCERIA fluitans*, Floating Meadow-grass.
Wet and marshy places, common.
- G. aquatica*, Reed Meadow-grass.
Wet places, occasionally.
- SCLEROCHLOA maritima*, Creeping Sea Meadow-grass.
Salt-marshes, occasionally.
- S. procumbens*, Procumbent Sea Meadow-grass.
Sea-coast, rare.
- S. distans*, Reflexed Meadow-grass.
Near the coast, occasionally.
- S. rigida*, Hard Meadow-grass.
Between Arbroath and East Haven.
- BEIZA media*, Common Quaking-grass.
Natural pastures, as links, frequent.
- CYNOSURUS cristatus*, Crested Dog's-tail-grass.
Pastures and waysides, frequent.
- DACTYLIS glomerata*, Rough Cock's-foot-grass.
Waysides and woods, common.
- FESTUCA pratensis*, Spiked Fescue-grass.
Moist pastures, not common.

- FESTUCA elatior**, Tall Fescue-grass.
Sides of streams and woods, frequent.
- F. rubra**, Creeping Fescue-grass.
Sea-coast west of Arbroath, frequent.
- F. ovina**, Sheep's Fescue-grass.
Hilly pastures, common.
- F. sciuroides**, Wall Fescue-grass.
Dry localities, rare.
- BROMUS sterilis**, Barren Brome-grass.
Waysides, occasionally.
- B. mollis**, Soft Brome-grass.
Waste places, common.
- B. racemosus**, Smooth Brome-grass.
Waysides and waste places, frequent.
- BRACHYPODIUM sylvaticum**, Slender False Brome-grass.
Shady places, not common.
- TRITICUM caninum**, Fibrous-rooted Wheat-grass.
Woods and banks, frequent.
- T. repens**, Couch-grass.
Fields and waste places, common.
- T. junceum**, Rushy Wheat-grass.
Sandy sea-shore, frequent.
- LOLIUM perenne**, Rye-grass.
Pastures and waysides, common.
- L. temulentum**, Bearded Darnel.
Near Guthrie, rare.
- L. multiflorum**, Annual many-flowered Rye-grass.
Occasionally in fields.
- ELYMUS arenarius**, Upright Sea Lyme-grass.
Plentiful on the sea-coast.

-
- HORDEUM** marinum, Wall Barley-grass.
 Dry sandy places, frequent.
- H.** maritimum, Sea-side Barley.
 Sea-coast, occasionally.
- NARDUS** stricta, Common Mat-grass.
 Moors and heaths, plentiful.
-

CLASS III.—ACOTYLEDONS.

ORDER 89.—FILICES.

- PTERIS** aquilina, Bracken.
 Banks and woods, abundant.
- CRYPTOGRAMME** crispa, Parsley-fern.
 Sidlaw Hills.
- LOMARIA** spicant, Northern Hard-fern.
 Woods, not uncommon,
- ASPLENIUM** Ruta-muraria, Wall-rue-spleenwort.
 Not unfrequent on old walls and buildings.
- A.** Trichomanes, Common Wall-spleenwort.
 On old walls, occasionally.
- A.** marinum, Sea-spleenwort.
 Sea-cliffs.
- A.** Adiantum-nigrum, Black-spleenwort.
 Rocky banks and dens, not common.
- ATHYRIUM** Filix-fœmina, Lady-fern.
 Frequently found in woods and shady places.
- SCOLOPENDRIUM** vulgare, Hart's-tongue.
 Caves and rocks near Auchmithie.

- LYCOPodium alpinum*, Savin-leaved Club-moss.
Sidlaw Hills, abundant.
- L. inundatum*, Marsh Club-moss.
Said to have been found in Ardovie Wood.
- L. selago*, Fir Club-moss.
Sidlaw Hills, Restenet Moss, &c.
- SELAGINELLA selaginoides*, Lesser Alpine Club-moss.
Moist places, as sands of Barrie, Sidlaw Hills.

ORDER 91.—*MARSILEACEÆ.*

- PILULARIA globulifera*, Pill-wort.
Shallow pools, as near Aberlemno, rare.

ORDER 92.—*EQUISETACEÆ.*

- EQUISETUM arvense*, Corn Horse-tail.
Sides of fields and banks, abundant.
- E. sylvaticum*, Wood Horse-tail.
Moist woods and hedge-banks, occasionally.
- E. palustre*, Marsh Horse-tail.
Marshy places, as at Rescobie, common.
- E. limosum*, Smooth Naked Horse-tail.
Pools and lakes, frequent.
- E. variegatum*, Variegated Rough Horse-tail.
Moist places, as sands of Barry.

APPENDIX.

I.

MUSCI, &c. MOSSES.

The following is a list of some of the Mosses and Hepaticæ found in the southern and eastern parts of the county. It is not to be considered anything like complete, and is intended only to represent the more common species, with a few of the rarer ones. It may be here noted that according to the latest authorities the county contains nearly 500 species of the above—being a much larger number than that contained in any other county in Great Britain :—

ANDREÆA rupestris,	Rock Andreaea.
SPHAGNUM cymbifolium,	Bog-moss.
S. compactum,	Compact Bog-moss.
S. squarrosum,	Spreading-leaved Bog-moss.
GYMNOSTOMUM microstomum,	Small-mouthed Beardless-moss.
SPLACHNUM sphericum,	Globe-fruited Bottle-moss.
ENCALYPTA vulgaris,	Extinguisher-moss.
CATOSCOPIUM nigrum,	Lurid Apple-moss.
WEISSIA controversa,	Green-cushioned Weissia.
W. verticillata,	Whorled Weissia.
GRIMMIA pulvinata,	Grey-cushioned Grimmiæ.
G. ovata,	Ovate Grimmiæ.
G. maritima,	Sea-side Grimmiæ.
DICRANUM squarrosum,	Drooping-leaved Fork-moss.

DIORANUM crispum,	Curl-leaved Fork-moss.
D. heteromallum,	Silky-leaved Fork-moss.
D. scoparium,	Broom Fork-moss.
CERATODON purpureus,	Purple Fork-moss.
POTTIA Heimii,	Long-stalked Beardless-moss.
DISTICHUM inclinatum,	Oblique-fruited Distichium.
TORTULA rigida,	Rigid Screw-moss.
T. muralis,	Wall Screw-moss.
T. ruralis,	Great Hairy Screw-moss.
T. unguiculata,	Bird's-claw Screw-moss.
RACOMITRIUM lanuginosum,	Woolly Fringe-moss.
R. canescens,	Hoary Fringe-moss.
ORTHOTRICHUM cupulatum,	Single-fringed Bristle-moss.
O. anomalum,	Anomalous Bristle-moss.
O. affine,	Wood Bristle-moss.
O. fastigiatum,	Close-tufted Bristle-moss.
O. speciosum,	Showy Bristle-moss.
O. Lyellii,	Lyell's Bristle-moss.
POGONATUM nanum,	Dwarf Hair-moss.
P. aloides,	Aloe-leaved Hair-moss.
P. urnigerum,	Urn-fruited Hair-moss.
POLYTRICHUM gracile,	Slender Hair-moss.
P. commune,	Common Hair-moss.
P. piliferum,	Bristle-pointed Hair-moss.
BRYUM Warneum,	Warren Thread-moss.
B. calophyllum,	Broad-leaved Thread-moss.
B. crudum,	Alpine glaucous Thread-moss.
B. carneum,	Pink-fruited Thread-moss.
B. argenteum,	Silvery Thread-moss.
B. capillare,	Greater matted Thread-moss.

BRYUM pallens,	Pale-leaved Thread-moss.
B. Wahlenbergii,	Swelling Bog Thread-moss.
B. roseum,	Rosaceous Thyme Thread-moss.
B. pallescens,	Tall clustered Thread-moss.
MNIUM hornum,	Swan-neck Thyme Thread-moss.
M. rostratum,	Long-beaked Thyme Thread-moss.
M. punctatum,	Dotted Thyme Thread-moss.
MESSIA uliginosa,	Dwarf messia.
AMBLYODON dealbatus,	Lesser pale Thread-moss.
FUNARIA Muhlenbergii,	Muhlenberg's Cord-moss.
PHYSCOMITRIUM fasciculare,	Bladder-moss.
BARTRAMIA pomiformis,	Apple-moss.
B. fontana,	Fountain Apple-moss.
NECKERA crispa,	Crisped Neckera.
FISSIDENS bryoides,	Mungo Park moss.
F. adiantoides,	Fern-leaved Fork-moss.
PTEROGONIUM gracile,	Slender Pterogonium.
ISOTHECIUM alopecurum,	Fox-tail Frond-moss.
CLIMACIUM dendroides,	Marsh Tree-moss.
HYPNUM denticulatum,	Sharp Fern-like Feather-moss.
H. Serpens,	creeping Feather-moss.
H. purum,	Meadow Feather-moss.
H. plumosum,	Rusty Feather-moss.
H. salebrosum,	Smooth-stalked Feather-moss.
H. lutescens,	Rough-Stalked yellow Feather-moss.
H. Crista-Castrensis,	Ostrich-plume Feather-moss.
H. molluscum,	Plumy-crested Feather-moss.
H. fluitans,	Floating Feather-moss.
H. polygamum,	Cluster-flowered Feather-moss.
H. abietinum,	Spruce-tree Feather-moss.

HYPNUM cordifolium,	Heart-leaved Feather-moss.
H. elodes,	Fine-leaved marsh Feather-moss.
H. splendens,	Glittering Feather-moss.
H. commutatum,	Curled Fern Feather-moss.
HOOKEIA lucens,	Shining Hookeria.
CRYPHÆA heteromalla,	Lateral Cryphæa.
FONTINALIS antipyretica,	Greater Water-moss.
JUNGERMANNIA asplenoides.	Spleenwort Junger-
mannia.	
J. Dillenii,	Dillenian Jungermannia.
J. pumila,	Dwarf Jungermannia.
J. cordifolia,	Heart-leaved Jungermannia.
J. Trichomania,	Fern Jungermannia.
J. inflata,	Inflated Jungermannia.
J. tomentella,	Spongy Jungermannia.
J. multifida;	Many-lobed Jungermannia.
J. Hookeri,	Hookerian Jungermannia.
J. Blasia,	Flask-bearing Jungermannia.

II.

LICHENES. LICHENS.

The following Lichens were gathered by Mr Brebner, last August, during a walk from Arbroath along the Cliffs to Auchmithie, returning by Seaton Woods :—

PARMELIA saxatilis.	Grey-stone Parmelia.
P. parietina.	Yellow-wall Parmelia.
P. aquila.	Sun-burnt Parmelia.
P. caperata.	Wrinkled-sulphur Parmelia.

PARMELIA olivacea.	Olive-coloured Parmelia.
RAMALINA scopulorum.	Rock Ramalina.
R. polymorpha.	Many-shaped Ramalina.
R. farinacea.	Narrow-meally Ramalina.
EVERNIA prunastri.	Ragged-hoary Evernia.
BORRERA tenella.	Lesser-ciliated Borrera.
B. furfuracea.	Branny Borrera.
CETRARIA glauca.	Glaucous Cetraria.
SCYPHOPHORUS pyxidatus.	Common Cup-lichen.
PLACODIUM canescens.	Grey-tree Placodium.

III.

ALGÆ. SEA-WEEDS.*

Although the sea-weeds of the Forfarshire coast are particularly rich both in number and variety, they have never been thoroughly investigated, and many of them, we have reason to believe, have not yet been described. In the following list, which is very incomplete, we have given the most common species along with a few of the rarer ones. The most favourable opportunities for securing specimens of the less common species are at low water of a spring tide or after a storm. It will be observed from this list that several of the smaller sea-weeds grow upon the larger ones.

* 'O call us not weeds! we are flowers of the sea,
For lovely and bright and gay-tinted are we,
And quite independent of sunshine and showers,—
Then call us not weeds, we are Ocean's gay flowers!'

1.—*MELANOSPERMEÆ*. OLIVE SEA-WEEDS.

- HALIDREYS siliquosa*. Common in rocky pools and deep water.
- FUCUS vesiculosus*, Bladder-wrack. Very common.
F. serratus, Notched-wrack. Common.
F. nodosus, Knotted-wrack. Common.
F. canaliculatus, Crow-dulse.
 Common near high-water mark.
- HIMANTHALIA Lorea*. Common at low-water mark.
- DESMARESTIA aculeata*. Common in pools at low-water mark, and in deep water.
- ALARIA esculenta*. Henware.
 Common at low-water-mark and in deep water.
- LAMINARIA digitata*, Tangle. Very common.
L. saccharina. Frequent in deep water and at low-water-mark.
- L. bulbosa*, Sea-furbelows. Occasionally.
- CHORDA Filum*, Sea-cord.
 Common in pools and deep water.
- C. lomentaria*. Frequent in pools.
- DICTYOSIPHON foeniculaceus*. Common between tide-marks.
- ASPEROCOCOUS echinatus*. Common between tide-marks.
- CHORDARIA flagelliformis*. Frequent between tide-marks.
- ECTOCARPUS siliculosus*. Common on other Algae.
E. littoralis. Common at various depths.

2.—RHODOSPERMEÆ. RED SEA-WEEDS.

- ODONTHALIA dentata.* Common at low-water mark
and in deep water.
- POLYSIPHONIA urceolata.* Common on rocks and algæ.
- P. elongata.* Rare.
- P. nigrescens.* Common on rocks, &c.
- P. fastigiata.* Very common on *Fucus*.
- DASYA coccinea,* Scarlet *Dasya*. Rare.
- LAURENCIA pinnatifida,* Pepper-dulse. Very common.
- CHYLOCLADIA articulata,* Jointed *Chylocladia*.
Common.
- CORALLINA officinalis,* Medicinal Coralline. Plentiful.
- DELESSERIA Sanguinea.* Common in rock pools, and
deeper water.
- D. sinuosa.* Frequent, often on *Laminaria digitata*.
- D. alata.* Common, often on stems of *Laminaria*.
- D. hypoglossum.* Occasionally.
- NITOPHYLLUM laceratum.* Occasionally cast up from
deeper water.
- PHOCAMIMUM coccineum.* Very common.
- RHODYMENIA laciniata.* Occasionally cast up from
deeper water.
- R. palmata,* Dulse. Very common.
- GELIDIUM corneum.* Occasionally.
- GIGARTINA mamillosa,* Crow-dulse.
Common on rocks at low-water mark.
- GEONDEUS crispus,* Irish moss. Very common.
- FURCELLARIA fastigiata.* Common in rock pools.
- IRIDÆA edulis,* Lesser-dulse.
Common at low-water mark.

- CATENELLA opuntia.** Occasionally on rocks near high-water mark.
- PTILOTA plumosa.** Common on stems of *Laminaria Digitata*.
- P. sericea.** Common on faces of rocks between tide-marks.
- CERAMIMUM rubrum.** Very common.
- C. Deslongchampsii.** Rare.
- C. diaphanum.** Not uncommon between tide-marks.
- C. acanthonotum.** On rocks, &c., between tide-marks.
- C. ciliatum.** Occasionally.
- GRIFFITHSIA setacea.** Rare.
- CALLITHAMNION tetragonum.** Rare, usually on larger algæ.
- C. roseum.** Occasionally on rocks and larger algæ.
- C. Brodiaei.** On algæ at low-water mark. Rare.
- C. Turneri.** On other algæ between tide-marks.

3.—CHLOROSPERMEÆ. GREEN SEA-WEEDS.

- BRYOPSIS plumosa.** In pools between tide-marks. Rare.
- CLADOPHORA rupestris.** Common on rocks between tide-marks.
- C. arcta.** Common on rocks between tide-marks.
- CONFERVA ærea, C. fracta, C. albida, and C. rupestris** are found occasionally in rock pools, &c.
- ENTEROMORPHA compressa.** Sea-grass. Very common.
- E. intestinalis.** Common between tide-marks.
- ULVA latissima.** Green slake. Very common.
- U. Lactuca** and **U. Linza** also occur.
- PORPHYRA laciniata.** Brown slake. Very common.
- P. vulgaris.** Common between tide marks.

ADDITIONS TO THE LIST
OF
FLOWERING PLANTS AND FERNS.

After the foregoing list was in type we received from Mr W. B. Simson, Broughty Ferry, the following valuable notes and additions :—

ADDITIONAL PLANTS.

- RANUNCULUS hirsutus*. 'I have gathered it at Broughty Ferry, but the station is now destroyed. No doubt it is still to be found in the district.'
- R. Flammula*, *B. pseudo-reptans*. Ditches at Barry.
- FUMARIA capreolata*. Harecraigs.
- SISYMBRIUM thalianum*. Barry.
- LEPIDIUM campestre*. Nine-wells.
- RESEDA lutea*. Forfar railway, along with *R. luteola*.
- VIOLA sylvestris*. —
- V. tricolor*, *B. arvensis*. —
- SILENE conica*. Montrose.
- MELILOTUS alba*. Newtyle line, Invergowrie, and Dundee and Arbroath line.
- LATHYRUS maritimus*. Observed by Mr Simson on the shore of the Tay (Monifieth district) every year from 1875–8, but the station is now destroyed.
- ORNITHOPUS perpusillus*. Broughty Ferry.
- SEDUM anglicum*. Harecraigs.
- ADOXA moschatellina*. Den of Mains.

<i>GALIUM uliginosum.</i>	Elliot.
<i>SENECIO viscosus.</i>	—
<i>DORONICUM Pardalianches.</i>	Den of Mains.
<i>D. plantagineum.</i>	Keithock, Brechin.
<i>ARCTOSTAPHYLOS uva-ursi.</i>	Sidlaws.
<i>LINARIA cymbalaria.</i>	On walls at Broughty Ferry.
<i>VERONICA polita,</i>	Not uncommon.
• <i>V. buxbaumii.</i>	—
<i>LAMIUM album.</i>	—
<i>POLEMONIUM cæruleum.</i>	Ditches on hill between Stracathro and Brechin.
<i>ORCHIS latifolia.</i>	—
<i>O. incarnata.</i>	—
<i>GYMNADENIA albida.</i>	Hill of Stracathro.
<i>POLYSTICHUM aculeatum.</i>	—
<i>P. lobatum.</i>	—
<i>LYCOPODIUM annotinum.</i>	—

—o—

Notes on Plants already in the List.

Mr Simson has found both the smooth and rough varieties of *Silene inflata*.

He has found the following with white flowers :—
ERODIUM cicutarium ; *ONONIS arvensis*, Barry ; *CENTAUREA scabiosa*, Nine-wells ; *ERICA tetralix*, Barry.
*ECHIU*m *vulgare* grows in quantity on the railway banks both east and west of Dundee. *TRIENTALIS europea* grows abundantly in many woods to the north of Dundee. He has found *HABENARIA viridis* on the Arbroath cliffs. *LISTERA cordata* is not uncommon on the Sidlaws.

GUIDE
TO THE
EXAMINATION
OF
PHANEROGAMOUS PLANTS.

Example.—WALLFLOWER.

I. ROOT.

- (1) Form—*Fibrous, branched.*
- (2) Nature—*Woody.*
- (3) Duration—*Biennial.*

II. STEM.

- (1) Direction—*Erect.*
- (2) Division—*Branched.*
- (3) Form—*Slightly angular.*
- (4) Surface—*Glabrescent.*
- (5) Structure—*Solid, exogenous.*

III. LEAVES.

- (1) Position—*Cauline.*
- (2) Arrangement—*Alternate.*
- (3) Stipulation—*Exstipulate.*
- (4) Insertion—*Stalked.*
- (5) Division—*Simple.*
- (6) Form—*Lanceolate.*
- (7) Margin—*Entire.*
- (8) Termination—*Acute.*
- (9) Texture—*Thin.*
- (10) Surface—*Covered with forked hairs.*
- (11) Venation—*Reticulated.*

IV. INFLORESCENCE.

- (1) Kind—*Indefinite*.
- (2) Form—*Raceme*.

V. FLOWER.

- (1) Di-, Mono-, or A-chlamydeous?—*Dichlamydeous*.
- (2) Regular or Irregular?—*Regular*.
- (3) Symmetrical or Unsymmetrical? — *Unsymmetrical*.
- (4) Bisexual, Monœcious, or Dioecious? *Bisexual*.

VI. CALYX (Sepals).

- (1) Number—*Four*.
- (2) Cohesion—*Polysepalous*.
- (3) Adhesion—*Inferior*.
- (4) Form—*Lanceolate*.
- (5) Colour—*Green or brown*.
- (6) Duration—*Deciduous*.

VII. COROLLA (Petals).

- (1) Number—*Four*.
- (2) Cohesion—*Polypetalous*.
- (3) Adhesion—*Hypogynous*.
- (4) Form—*Cruciate, obovate, clawed*.
- (5) Colour—*Yellow or reddish-brown*.

Or PERIANTH (Leaves).

- (1) Number.
- (2) Cohesion.
- (3) Adhesion.
- (4) Form.
- (5) Colour.

VIII. STAMENS.

- (1) Number—*Six*.
- (2) Cohesion—*Polyandrous (Tetradynamous)*.
- (3) Adhesion—*Hypogynous*.

a Filaments.

- (1) Form—*Filiform*.

b Anthers.

- (1) Form—*Lanceolate*.
- (2) Division—*Two-celled*.
- (3) Insertion—*Innate*.
- (4) Dehiscence—*Introrse and longitudinal*.

IX. PISTIL (Carpels).

- (1) Number—*Two*.
- (2) Cohesion—*Syncarpous*.
- (3) Adhesion—*Superior*.

a Ovary.

- (1) Form—*Linear, compressed*.
- (2) Division—*Spuriously two-celled*.

b Styles.

- (1) Number—*Monogynous*.
- (2) Position—*Terminal*.
- (3) Form—*Thick and short*.

c Stigma.

- (1) Division—*Two-lobed*.
- (2) Form—*Lobes obtuse*.

d Ovules.

- (1) Number—*Indefinite*.
- (2) Position—*Pendulous*.
- (3) Placentation—*Parietal*.

X. FRUIT.

- (1) Name—*Siliqua*.
- (2) Nature—*Syncarpous, dry, dehiscent*.
- (3) Dehiscence — *From below upwards into two valves*.

a Seeds.

- (1) Number—*Indefinite*.
- (2) Form—*Compressed*.
- (3) Nature—*Exalbuminous*.

XI. GENERAL REMARKS.

- (1) Habitat—*Old walls and rocks*.
- (2) Time of Flowering—*5-6*.
- (3) Properties—*Delicious odour and bitter taste*.

XII. CLASSIFICATION.

- (1) Class—*Dicotyledones*.
- (2) Division—*Polypetalæ*.
- (3) Sub-Division—*Thalamifloræ*.
- (4) Order—*Cruciferae*.
- (5) Genus—*Cheiranthus*.
- (6) Species—*Cheiri*.

INDEX

OF THE

NATURAL ORDERS

OF

FLOWERING PLANTS AND FERNS,

Arranged in order of London Catalogue, and classified
as in Hooker's 'Student's Flora.'

CLASS I.—DICOTYLEDONS.

DIVISION I.—POLYPETALÆ.—*Flowers with both calyx and corolla (dichlamydeous)—petals free.*

Sub-Division 1.—THALAMIFLORÆ.—*Stamens inserted on the receptacle (hypogynous), free from the calyx—ovary superior.*

ORDER.	PAGE.	ORDER.	PAGE.
1. Ranunculacæ,	- 1	9. Droseracæ,	- 5
2. Berberidæ,	- 2	10. Polygalæ,	- 5
3. Nymphæacæ,	- 2	12. Caryophyllæ,	- 5
4. Papaveracæ,	- 2	12.* Illecebracæ,	- 7
4.* Fumariacæ,	- 3	13. Portulacæ,	- 7
5. Crucifæræ,	- 3	16. Hypericinæ,	- 7
6. Resedacæ,	- 4	17. Malvacæ,	- 7
7. Cistacæ,	- 4	19. Linææ,	- 8
8. Violacæ,	- 4	20. Geraniacæ,	- 8

Sub-Division 2.—CALYCIFLORE.—Stamens inserted on the calyx (perigynous or epigynous).

ORDER.	PAGE.	ORDER.	PAGE.
25. Leguminosæ, -	9	31. Crassulacæ, -	14
26. Rosacæ, -	11	32. Saxifragæ, -	14
27. Lythracæ, -	13	33. Umbelliferae, -	14
28. Onagraricæ, -	13	34. Araliacæ, -	16
28.* Haloragæ, -	13		

DIVISION II.—MONOPETALÆ, OR GAMOPETALÆ.—*

Flowers with both calyx and corolla (dichlamydeous)—petals more or less connate into a two or more lobed corolla.

ORDER.	PAGE.	ORDER.	PAGE.
37. Caprifoliacæ, -	16	48. Convolvulacæ, -	22
38. Rubiacæ, -	16	49. Solanæ, -	22
39. Valerianæ, -	17	50. Scrophularinæ, -	22
40. Dipsacæ, -	17	53. Labiata, -	24
41. Compositæ, -	17	54. Boraginæ, -	25
42. Campanulacæ, -	20	55. Pinguiculacæ, -	26
43. Ericacæ, -	21	56. Primulacæ, -	36
44. Jasminacæ, -	21	57. Plumbaginæ, -	27
45. Apocynacæ, -	21	58. Plantaginæ, -	27
46. Gentianæ, -	21		

* For Sub-Division III., at page 16, read Division II.

DIVISION III.—APETALÆ, OR INCOMPLETE.—Corolla and often Calyx absent.

ORDER.	PAGE.	ORDER.	PAGE.
61. Chenopodiacæ, -	28	70. Ceratophylles, -	29
62. Polygonacæ, -	28	71. Urticæ, -	29
67. Empetracæ, -	29	72. Amentiferae, -	30
68. Euphorbiacæ, -	29	73. Coniferae, -	31

CLASS II.—MONOCOTYLEDONS.

DIVISION I.—PETALOIDEÆ.—*Perianth usually petaloid, more or less brightly coloured—rarely green.*

ORDER.	PAGE.	ORDER.	PAGE.
74. Typhaceæ, - -	32	80. Orchideæ, - -	34
76. Lemnaceæ, - -	32	81. Irideæ, - -	35
77. Naiadeæ, - -	32	84. Lilaceæ, - -	35
78. Alismaceæ, - -	34	86. Juncææ, - -	36
79. Hydrocharideæ, -	34		

DIVISION II.—GLUMACEÆ.—*Flowers without proper perianth—glumaceous.*

ORDER.	PAGE.	ORDER.	PAGE.
87. Cyperaceæ, - -	37	88. Gramineæ, - -	39

CLASS III.—ACOTYLEDONS, OR CRYPTOGRAMS.

ORDER.	PAGE.	ORDER.	PAGE.
89. Filices, - -	43	91. Marsileaceæ, - -	45
90. Lycopodiaceæ, -	44	92. Equisetaceæ, - -	45

